

## ABSTRACT OF THE DISCLOSURE

An adaptive pre-processing technique is provided to reduce perceptually unimportant information in a frame (such as some of the high frequency information) so as to optimize compression efficiency and to maximize perceived video quality of a compressed video sequence for a given bit rate. This pre-processing includes a combination of performing pre-filtering of video data to remove high frequency components and to smooth out high frequency texture information within object boundaries, based at least in part on human visual system characteristics. The technique is adaptive in that feedback regarding the current state of the encoder is used to change the filtering strength or region of support for subsequent frames, as needed, in order to maintain the bit budget while still generating visually acceptable video quality.

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